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A New Species of *Andrena* at the *Micrandrena-Scaphandrena* Boundary (Hymenoptera: Apoidea)

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Abstract.—A new species of *Andrena, A. (Micrandrena) robinsoni* is described from Colorado. Two related species, *trapezoidea* Viereck and *primulifrons* Casad are transferred from the subgenus *Scaphandrena* where they were placed by Ribble to the subgenus *Micrandrea.*

The two subgenera *Micrandrena* and *Scaphandrena* are closely related, and both have been monographed by Ribble (1968, 1974). *Scaphandrena* has been given special attention on account of the extensive introgressive hybridization by two or three of its species in the Rocky Mountain region, the trihybrid complex "*scurra* Viereck x *capricornis* Casad and Cockerell x *arabis* Robertson" of Ribble (1973, 1974) and further described by me (1981, 1984).

In my experience in Pennsylvania and the Rocky Mountain region, *Scaphandrena* is an oligolege of small-flowered crucifers. Species of *Micrandrena* are frequently collected on the same hosts as pollen-gathering females of *Scaphandrena,* but *Micrandrena* as a group has a wide range of pollen sources. Ribble thought that the *primulifrons* group, originally assigned to *Micrandrena* was a crucifer oligolege, and finally suggested that on the basis of morphology and nomenclatorial convenience it should be transferred to *Scaphandrena,* as it now appears in the *Catalogue of Hymenoptera in America North of Mexico* (Krombein et al, 1979). Ribble states that within *Scaphandrena* the closest relative of the sibling species *primulifrons* Casad and *trapezoidea* Viereck (the *primulifrons* group) is *capricornis.*

In collecting specimens of the hybrid complex for the University of Colorado Museum there accumulated a small lot of a species of the *primulifrons* group which I provisionally considered to be *trapezoidea* Viereck. Recently Frank Parker and Terry Griswold of the USDA Bee Systematics and Biology Laboratory at Logan, Utah, lent me specimens of *trapezoidea* from Texas determined by Ribble. The Colorado specimens turned out to be a third species of the *primulifrons* group, which is described below.

Andrena (Micrandrena) robinsoni, NEW SPECIES

This Colorado species has the strongly punctate abdominal terga characteristic of the *primulifrons* group, but can be distinguished at a glance from the females of the other two species, the rare *trapezoidea* and common *primulifrons* Casad, whose distribution lies to the south and southwest, by a shiny, very sparsely punctate median area of about one third the length of the 2nd abdominal tergite, with both anterior and posterior margins becoming closely and strongly punctate. The general

appearance of the bee is dominated by the three white abdominal hair bands and the contrasting bare, shiny anterior third of the abdomen. *Robinsoni* is also more robust, 8 mm in length instead of 7.

Female.—Length 8 mm. Integument black to brown black with obscure metallic reflections of blue and green, except for the obscure amber apices of the tergites and the bright reddish brown flagellum of the antennae.

Head with brownish white hairs, labral fringe golden-amber; measurements of the facial quadrangle (distance between middle of eyes and vertex and bottom of clypeus) with w:1 ratio of 3.6:4.5; clypeus with upper half markedly flattened, dull and strongly reticulate, strongly contrasting with the shiny and polished lower half which is coarsely and irregularly punctate; facial fovea seen from front dark, golden-tomentose seen obliquely, upper end occupying less than half space between it and ocellus, widening centrally then narrowing below to about 1/2 width of space between it and antennal insertion, ending just below level of insertion; upper ocelli 1/2 ocellus width from vertex; antenna with segment 3 not quite as long as 4 + 5; process of labrum 2–3 times as wide at base as at tip, which is truncate, sometimes slightly emarginate; labrum shallowly concave, ending with a narrow raised rim; galea reaching as far as apex of 4th segment of maxillary palpus.

Thorax covered with long, slender grayish-white hairs dorsally, so sparse that the moderately reticulate, semi-shining, closely (2–3 p–w apart) and strongly punctate integument of notum is not obscured; hair on pleura thickened, whiter; scutum with integument like that of notum, scutellum and triangle of propodeum strong-reticulate, triangle with weak longitudinal wrinkles above, rest of propodeum strongly reticulate but semi-shining and obscurely punctate; pronotum with lateral lines extending from pit at base of pronotal lobe diagonally across side of pronotum, fading out at about 1/3 distance to midline; corbiculum without anterior fringe, posterior half with sparse long simple hairs; legs with integument black to brown-black, tibial spurs white-translucent, middle basitarsis broadened, lateral margins curved outward, hind leg with tibia strongly widened apically, the basitarsis about half its width at point of attachment, face of tibial scopa of short and simple hair, the profile (not hair-length) of posterior fringe of scopa at midpoint of tibia a little less than half width of tibia at apex, trochanteral floccus imperfect, with basal hairs short and not recurved; tooth of hind tarsal claw with length about 1/4 distance from inner base of tooth to tip of claw; forewing 6 mm, veins amber, membrane clear, wingtips slightly infused with amber, pterostigma rather slender, less than 1 1/2 times width of prestigma, first transverse cubital vein ending 3–4 vein-widths distant from pterostigma, basal nervure meeting or falling slightly short of nervulus.

Abdomen with three strong, appressed hair bands on apices of tergites 2–4, that of second complete or interrupted medially by about 1/4th the width of the tergite, hairs white, as are the sparse fine decumbent hairs between the bands, caudal fimbria brownish orange; integument of 1st three tergites non-reticulate, polished, 4th weakly reticulate, 1st with wide-scattered weak punctures, the 2nd with anterior and posterior margins closely and coarsely punctate, with punctures 1–3 p–w apart, becoming increasingly sparse toward mid-third of third of tergite, where the punctures are coarse but very widely scattered, 3rd and 4th tergites entirely closely strong-punctate.

Holotype female.—COLORADO, 10 mi SW Loveland, 5500′, 26 May 1980, fls. *Physaria belli,* P. Robinson.

Paratypes female.—2, same data as holotype; 2 with same data except U. Lanham; 1, COLORADO Weld Co., 6 mi ENE Nunn, 8 June 1981, fls. *Rorippa sinuata,* U. Lanham; 1, COLORADO, Weld Co., Briggsdale, 19 May 1979, fls. *Descurainia,* U. Lanham.

An additional female, COLORADO, Baca Co., 31 mi SSW Springfield, 4 May 1977, U. Lanham and P. Byron.

A byproduct of this study was the discovery of a character which distinguishes females of the *primulifrons* group from *capricornis* and from the females of the several other species of *Scaphandrena* available to me. The visible labrum in the *primulifrons* group is shallowly concave in profile, while that of *capricornis* and the sundry species of *Scaphandrena* is evenly convex. It seems to me that the three species of the *primulifrons* group do not pose the danger of sinking *Scaphandrena* in *Micrandrena* as feared by Ribble, and should be returned to *Micrandrena.* Also the females of six species of the *piperi* group of *Micrandrena,* thought by Ribble (1968) to intergrade with *Scaphandrena,* seen by me, have the labrum similarly concave.

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